

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE J		PAGE OF PAGES 1 4	
2. AMENDMENT/MODIFICATION NO. 0001		3. EFFECTIVE DATE 16-Dec-2004		4. REQUISITION/PURCHASE REQ. NO. A52D5043151004		5. PROJECT NO.(If applicable)	
6. ISSUED BY DOC-ANNISTON ARMY DEPOT DIRECTORATE OF CONTRACTING 7 FRANKFORD AVENUE ANNISTON AL 36201-4199		CODE W911KF		7. ADMINISTERED BY (If other than item 6) See Item 6		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)				<input checked="" type="checkbox"/> 9A. AMENDMENT OF SOLICITATION NO. W911KF-05-Q-0049			
				<input checked="" type="checkbox"/> 9B. DATED (SEE ITEM 11) 14-Dec-2004			
				10A. MOD. OF CONTRACT/ORDER NO.			
				10B. DATED (SEE ITEM 13)			
CODE				FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D. OTHER (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) <div style="text-align: center;">SEE PAGE TWO</div>							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print) Ronald L. Harter, Vice President				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: _____ EMAIL: _____			
15B. CONTRACTOR/OFFEROR <i>Ronald L. Harter</i> (Signature of person authorized to sign)		15C. DATE SIGNED 26 Jan 2005		16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)		16C. DATE SIGNED 16-Dec-2004	

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

1. The purpose of this amendment is to update FAR Clauses, delete one FAR Clause and correct the Specifications and Technical Evaluation Plan that was attached to the Solicitation.

- a. Update FAR Clause 52.212-2, entitled, "Evaluation—Commercial Items (Jan 99) as shown below.
- b. Update FAR Clause 52.214-4803, entitled, "Technical Literature (Oct 93) as shown below.
- c. Remove the Specifications attached to the Solicitation in its entirety and replace with the attached Specifications.
- d. Remove the Technical Evaluation Plan (Attachment #9), attached to the Solicitation in its entirety and replace with the attached Past Performance Evaluation Plan.

2. The closing date remain the same.

3. All other contract terms and conditions remain unchanged.

SUMMARY OF CHANGES

SECTION SF 1449 - CONTINUATION SHEET

The following have been modified:

52.212-2 EVALUATION—COMMERCIAL ITEMS (JAN 1999)

(a) The Government will award a contract resulting from this solicitation to the responsible offeror whose offer conforming to the solicitation will be most advantageous to the Government, price and other factors considered. The following factors shall be used to evaluate offers:

1. Technical
2. Past Performance
3. Price

Both Technical and Past Performance are trade-off factors. Technical is slightly more important than Past Performance and Past Performance is slightly more important than price. All Evaluation Factors, when combined are significantly more important than Price. Price will be evaluated on reasonableness.

The technical evaluation will consist of two parts: A Met/Not Met and a Trade-Off Evaluation. The trade-off will consist of the following technical factors:

- (1) Cooling System, if required:
 - (a) A "Good" for a once-through Water Cooling System
 - (b) A "Excellent" for Closed Loop Cooling System/No Cooling Required
- (2) Warranty Period:
 - (a) A "Good" for One-Year Warranty Period
 - (b) An "Excellent" for Two-Year Warranty Period

Past Performance will be rated as either, Poor, Good, Excellent, or Neutral. Past Performance sub-factors include (1) Quality-Conformance to specifications, (b) Delivery-Adherence to delivery schedule, (c) Response to request for maintenance/repair, and (d) Availability of spare parts.

NOTE: Offers with no relevant past performance will receive a neutral rating (No Rating).

(b) Options. The Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. The Government may determine that an offer is unacceptable if the option prices are significantly unbalanced. Evaluation of options shall not obligate the Government to exercise the option(s).

(c) A written notice of award or acceptance of an offer, mailed or otherwise furnished to the successful offeror within the time for acceptance specified in the offer, shall result in a binding contract without further action by either party. Before the offer's specified expiration time, the Government may accept an offer (or part of an offer), whether or not there are negotiations after its receipt, unless a written notice of withdrawal is received before award.

(End of clause)

52.214-4803 TECHNICAL LITERATURE (OCT 1993)

(a) With offer, the offeror shall furnish technical literature that has been used to market the proposed equipment. The technical literature will be used to technically evaluate the offers and shall show that the proposed equipment meets the requirements of the specification, specifically the technical features shown below:

1. A technical evaluation will be performed on all proposals for the Universal Hydraulic Test Stand. The technical evaluation will consist of two parts: a met/not-met evaluation and a trade-off evaluation.
2. With offer, the offeror shall furnish technical literature that has been used to market the proposed equipment and/or service. The technical literature will be used to technically evaluate the offers and shall show that the proposed equipment meets the minimum requirements of the specification, specifically the technical features shown below:

Section C - DESCRIPTION/SPECS/WORK STATEMENT:

Paragraph 3.1 Subsystems
Paragraph 3.4.6 Fluid temperature control
Paragraph 3.4.11 Cooling system
Paragraph 7.0 Operation, maintenance and calibration training proposed

3. The features required above to be shown in the technical literature are necessary to determine the offeror's technical acceptance. If the offeror's preprinted literature does not show all these features, the offeror may attach a letter or supplemental information to the literature describing those required features. All literature and supplemental information shall be in the US Customary System of Measurements and in the English language.

4. The failure of technical literature to show that the product and/or service offered conforms to the minimum requirements of this solicitation may require rejection of the offer.

Table 1.
Universal Hydraulic Test Stand

Technical Trade-Off Factors

Technical Factor (Specification Reference)	Minimum Requirement (Good)	Preferred Capability (Excellent)
Cooling System, if required (Specification Paragraph 3.4.11)	Once-through Water Cooling System	Closed Loop Cooling System/No Cooling Required
Warranty Period (Specification Paragraph 8.1)	One-Year Warranty Period	Two-year Warranty Period

(b) The features required above to be shown in the technical literature are necessary to determine the offeror's technical acceptance. If the offeror's preprinted literature does not show all these features, the offeror may attach a letter or supplemental information to the literature describing those required features. All literature and supplemental information shall be in US Customary System of Measurements and in the English language.

(c) The failure of technical literature to show that the product offered conforms to the requirements of this solicitation may require rejection of the offer.

The following have been deleted:

52.0214-4804 Evaluation Criteria (Oct 93)

JUL 1999

(End of Summary of Changes)

**DESCRIPTION/WORK STATEMENT/SPECIFICATION
FOR
UNIVERSAL HYDRAULIC TEST STAND**

Revised 11/08/04

1.0 Scope. This specification establishes the requirements for a multipurpose hydraulic component test stand to be located in building 117 at Anniston Army Depot, Anniston Alabama designed, fabricated, and installed by the contractor with all functions and capabilities as delineated herein. The contractor shall provide the resources necessary to design, manufacture, install, calibrate and demonstrate the functional operation of one (1) manual hydraulic component test stand. The test stand shall be capable of, and provide not less than the following independent circuits: flows up to 60 gpm at 3,000 PSI; flows up to 10 gpm at 5,000 PSI; static pressure of up to 10,000 psi; a bi-directional variable speed drive for testing pumps; and a motor test circuit as described herein. The test stand will be used to performance test various relief valves, hydraulic pumps and motors, selector valve assemblies, and hoses utilizing fire resistant hydraulic oil per MIL-PRF-46170C. This specification describes the minimum anticipated operational and performance requirements.

NOTE: Due to renovations scheduled for building 117, the test stand cannot be installed in the facility until approximately March 2006.

2.0 Applicable Documents.

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposals form a part of this specification to the extent specified herein:

U.S. DEPARTMENT OF LABOR

Occupational Safety and Health Regulations

CFR Title 29, Chapter XVII, Part 1910.212 General requirements for all Machines

CFR Title 29, Chapter XVII, Part 1910, Subpart S----Electrical

CFR Title 29, Chapter XVII, Part 1926, Subpart K----Electrical

(Application for copies should be made to the Superintendent of Documents,
Government Printing Office, Washington, DC 20402)

ELECTRONIC INDUSTRIES ALLIANCE

J-STD-001C – Requirements for Soldered Electrical and Electronic Assemblies

(Application for copies shall be made to the Institute for Interconnecting and Packaging
Electronic Circuits, 2215 Sanders Road, Northbrook, Illinois 60062-6135)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 The National Electrical Code, 1996

NFPA 79-02 Electrical Standard for Industrial Machinery, 2002

(Application for copies should be made to the National Fire Protection Association, One Batterymarch
Park, P.O. Box 9101, Quincy, Massachusetts 02269-9101)

UNDERWRITERS LABORATORIES INC.

UL 508 Standard for Safety for Industrial Control Equipment

(Application for copies should be made to Underwriters Laboratories, Inc., 333 Pfingsten Road,
Northbrook, IL 60062-2096)

DESCRIPTION/WORK STATEMENT/SPECIFICATION
FOR
UNIVERSAL HYDRAULIC TEST STAND

Revised 11/08/04

2.2 **Order of Precedence.** In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3.0 **Hydraulic Requirements.** The test stand shall consist of the following major components: hydraulic system, electrical system, cooling system, and all accessories required for proper and efficient operation.

3.1 **Subsystems.** The test stand hydraulic system shall consist of the following subsystems: main system pressure circuit, auxiliary pressure circuit, static pressure circuit, supercharge (pump test) circuit, and motor test circuit. All components of the hydraulic system shall be suitable for use with fire resistant hydraulic oil per MIL-PRF-46170C. Independent test capabilities shall be provided by each circuit, as described below:

3.1.1 **Main system pressure circuit.**

3.1.1.1 Flow up to 60 gallons per minute and pressure up to 3000 psi shall be available through needle type shutoff valves at a minimum of two separate outlets.

3.1.1.2 Two additional system pressure outlets shall be provided. One shall be through a shutoff valve, and the other shall be through a four-way, three position, open selector valve with center port connected to the return line.

3.1.1.2 A system by-pass line shall be provided, and shall be equipped with a needle type shutoff valve to control the supply pressure.

3.1.1.3 One return port connected to the flowmeter(s) shall be provided, and a minimum of two additional separate return ports shall be provided. A flowmeter with a minimum accuracy of 0.5 GPM shall be provided for measuring flows up to 5 GPM. In addition, a sufficient number of flowmeters shall be provided to insure 1% accuracy over the entire range of the flow. See paragraph 9.0 for typical component flow requirements.

3.1.2 **Auxiliary pressure circuit.**

3.1.2.1 An additional (auxiliary) pressure circuit consisting of a 10 gallon per minute, 5000 psi minimum pump shall be provided for testing items which require more than one supply flow.

3.1.2.2 As a minimum, the auxiliary circuit shall be made up of a single outlet through a shutoff and a by-pass line with a needle type shutoff valve. A sufficient number of flowmeters shall be provided to insure 1% accuracy over the entire range of the flow. See paragraph 9.0 for typical component flow requirements.

3.1.3 **Static pressure circuit.**

3.1.3.1 An air operated pump shall be built in the system and shall provide a static pressure up to 10,000 psi as a minimum. The pump shall be operated by existing shop air (approximately 100 psi).

3.1.4 **Pump test circuit.**

3.1.4.1 This circuit shall be used as the hydraulic pump test system.

3.1.4.2 A settable flow (0-60 gpm) and pressure (0-100 psi) shall be provided by a supercharge pump to enable testing of various hydraulic pumps.

3.1.4.3 The pump test circuit shall include a bi-directional (clockwise and counterclockwise rotation) variable speed drive. The variable speed drive shall be a solid state electronics controlled motor drive and rated suitable for the intended application. The motor shall provide 80 HP minimum at the output drive shaft. Maximum anticipated torque requirements are approximately 236 foot pounds at 1800 RPM.

**DESCRIPTION/WORK STATEMENT/SPECIFICATION
FOR
UNIVERSAL HYDRAULIC TEST STAND**

Revised 11/08/04

3.1.4.4. The speed control for the variable speed drive shall provide an infinitely variable adjustment throughout the speed range, with speed regulation of 0.5% or better. Speed range shall be 0 - 4800 RPM minimum, bi-directional. A digital speed indicator with a minimum accuracy of +/- 0.5 % shall be provided on the test stand front panel.

3.1.4.5 The pump test system shall include a torque sensor with a minimum range of 0 to 300 foot pounds. A digital indicator (including an appropriate strain gage conditioner) with a minimum accuracy of +/- 0.5 % shall be provided on the test stand front panel.

3.1.5 Motor test circuit.

3.1.5.1 The hydraulic motor test circuit shall include a dynamometer rated to provide a resistance of approximately 236 foot pounds minimum at 1800 RPM.

3.1.5.2 The dynamometer shall include a torque sensor with a minimum range of 0 to 300 foot pounds. A digital indicator (including an appropriate strain gage conditioner) with a minimum accuracy of +/- 0.5 % shall be provided on the test stand front panel.

3.1.5.3 Both the main pump and auxiliary pump shall be a variable delivery, pressure compensated type with volume controls located on the test stand front panel. The electric motor for the main pump shall be rated 100 HP minimum.

3.1.5.4 The motor test circuit shall include a DC power supply for testing hydraulic power pack assembly part number 12282832. The power supply shall be capable of providing 24 +5/-0 volts DC at up to 62 amperes. The power supply shall contain a digital ammeter and voltmeter.

3.2 **Material.** All material used shall be as specified herein. Material not specified shall be of the best quality used for the purpose in good commercial practice. The material shall be free from all defects and imperfections that might affect the serviceability of the finished product.

3.2.1 **Protective treatment.** Materials used in the construction of the equipment that are subject to deterioration when exposed to climatic and environmental conditions likely to occur during service usage shall be protected against such deterioration in a manner that will in no way prevent compliance with the performance requirements of this specification.

3.2.2 **Metals.** Metals shall be of corrosion resistant type, unless suitably protected to resist corrosion during normal service life and shall be suitable for the application intended. Metals not resistant to corrosion shall be dull zinc, or dull nickel plated.

3.2.2.1 **Dissimilar metals.** Unless suitably protected against electrolytic corrosion, dissimilar metals shall not be used in intimate contact with each other.

3.2.3 **Plating.** All fixtures, adapters, and couplings that are not made of corrosion resistant materials or anodized aluminum shall be dull zinc, or dull nickel plated. Plating shall be in accordance with standard commercial practice for this type of equipment.

3.3 Design and construction.

3.3.1 **Design.** The design, layout, and assembly of the cabinet and its component parts shall be such as to facilitate high volume production of units under test (UUT) and ease of maintenance.

3.3.2 **Structure.** All components shall be located within an all-metal, fully enclosed cabinet suitably braced to carry the load imposed. The cabinet shall be fully guarded to shield fan blades, heating coils, electrical connections, and any other component parts that may present a safety hazard to the operator. The cabinet shall be so

**DESCRIPTION/WORK STATEMENT/SPECIFICATION
FOR
UNIVERSAL HYDRAULIC TEST STAND**

Revised 11/08/04

constructed that it will withstand transportation by common carrier without damage. Instrument panels shall be constructed of 11 gage or heavier metal suitable for the purpose. Doors and cabinet panels other than instrument panels shall be a minimum of 14 gage metal. The cabinet or enclosure shall be rated for indoor use and shall provide a degree of protection against dust, falling dirt and dripping non-corrosive liquids.

3.3.3 **Size.** Test stand cabinet size shall not exceed 13 feet length by 8 feet depth (depth from the operator's side of the stand to the rear) by 7 feet height. These dimensions do not include any remotely located hydraulic power supply.

3.3.4 **Base design.** All cabinets and sections shall include longitudinal channels or other approved base design to permit the use of a standard fork lift truck for positioning or moving purposes. These provisions shall be a permanent part of the test stand, of sufficient strength and rigidity to support the load without undue stress or strain on the test stand itself, and shall be so arranged as to distribute the floor load evenly over the floor space occupied by the test stand.

3.3.5 **Accessibility.** The cabinet shall be of sufficient size to accommodate all components in an accessible manner. All internal components of the test stand shall be easily accessible. The test stand shall be designed to allow access for overhead hoist loading/unloading of heavy components. All controls for operating the test stand shall be located outside the safety shield required by paragraph 3.3.10.

3.3.6 **Toe clearance.** Toe clearance shall be provided at the operator's position on the test stand, a minimum of 6 inches height and 4 inches depth.

3.3.7 **Storage space.** A suitable storage area or space shall be provided for the operating manual and other documentation for the test stand. This area or space shall be permanently attached to the test stand, and shall be readily accessible.

3.3.8 **Leveling.** Provisions for leveling the test stand shall be provided.

3.3.9 **Work area.** A flat table top work area shall be provided for the operator, a minimum of 18 inches long by 18 inches wide.

3.3.10 **Safety shield.** A sliding door type transparent safety shield constructed of Lexan or equivalent shall be provided and shall extend the entire length of the test stand. This shield shall protect the operator from possible hydraulic spills or inadvertent hose ruptures during tests.

3.3.11 **Vibration.** The cabinet shall be constructed so that vibration from components such as pumps and motors shall not be transmitted through the structural members to any instrumentation, thus impairing readability and accuracy.

3.3.12 **Lights.** If required for maintenance purposes, any lighting required shall be vapor proof, of ample wattage, and be powered by nominal 120 volt, single phase, 60 Hertz current. Guards shall be provided around incandescent light bulbs to prevent personnel contact and inadvertent bulb breakage.

3.3.13 **Ventilation.** Louver type air vents shall be provided in the cabinet to promote air circulation, or the cabinet shall be provided with forced ventilation to prevent overheating of instruments and any electrical/electronic components.

3.3.14 **Work bench/drip pan.** The work bench shall be a tray provided at the front of the test stand and shall be arranged in such a way that it is used as a sump, with all outlets located along the edge of the tray. The sump drain shall be piped by to the reservoir. Tray dimensions shall be 18 inches wide by 108 inches long minimum.

3.3.15 **Panel holes.** All holes through test stand panels which may be required for installation of valves and fittings shall be of a standard size and type to permit replacement without rework of the panels.

**DESCRIPTION/WORK STATEMENT/SPECIFICATION
FOR
UNIVERSAL HYDRAULIC TEST STAND**

Revised 11/08/04

3.3.16 **Timer.** A digital timer shall be provided on the front of the test stand. The timer shall have a range of at least 60 minutes with 1 second increments. The timer shall be equipped with start/stop button and a reset button.

3.3.17 **Gages.** All gages shall be provided with a tap on the test stand front panel, connected between the gage and gage shut-off valve to permit calibration of the gage. Gages subject to continuous surges or extreme pressure fluctuations shall be protected by snubbers or dampeners. All gages shall be accurate within 1% and shall be readable by the operator from the test stand front panel.

3.4 **Additional requirements.**

3.4.1 **Electrical.** The test stand shall be designed to operate on 230/460 volt, three phase, 60 hertz electrical power. All wiring methods and practices shall conform to National Fire Protection Association (NFPA) 79-02 and NFPA 70. Industrial control devices for starting, stopping, regulating, controlling, or protecting electric motors shall conform to the requirements of Underwriters Laboratories UL 508. Adjustable-speed drives and accessories for use with adjustable-speed drives are covered by the Standard for Power Conversion Equipment, UL 508C. Devices that regulate temperature and/or control refrigeration equipment are covered by the Standard for Temperature-Indicating and -Regulating Equipment, UL 873, and other applicable standards. All electrical wiring and components shall be sized for both 230 VAC and 460 VAC operation. The test stand shall be wired for 460 VAC initial operation. The contractor shall supply the main electrical disconnect for the test stand. This disconnect may be mounted on the existing building wall behind the test stand. The Government shall provide 460 volt, three phase power to the main disconnect.

3.4.2 **Electrical noise.** The electrical power at Anniston Army Depot is subject to noise. If the test stand requires clean electrical power for proper operation, the contractor shall supply a properly sized power conditioning unit with the test stand. If the test stand is susceptible to interference from adjacent industrial machinery, the contractor shall provide proper shielding with the test stand to minimize test stand malfunctions.

3.4.3 **Safety and Health Requirements.** The test stand shall be in compliance with Occupational Safety and Health Administration (OSHA) 29 CFR 1910.212. The test stand shall include warning lights/indicators to alert the test stand operator to unsafe operating conditions. The test stand shall include at least one category 0 (uncontrolled) emergency stop switch as defined by NFPA 79-02 which shall immediately remove power to the machine actuators. Hinged or sliding doors containing ready access to moving parts that may pose a hazard shall be interlocked.

3.4.4 **Noise Level.** Noise emitted by the test stand shall be no greater than 80 decibels as measured per ANSI S12.23-1989. The 80-decibel limit is absolute. Techniques such as sound level averaging or exposure time weighing shall not be used in meeting this requirement. Any shields, baffles, enclosures or other devices required to bring the equipment into conformance with this requirement shall not interfere with visibility needed for safe operation of the test stand.

3.4.5 **Hydraulic Test Fluid.** As a minimum, the test stand shall operate with the following test fluid: fire resistant hydraulic oil per MIL-PRF-46170C.

3.4.6 **Fluid Temperature Control.** The test stand shall be capable of regulating the temperature of the test fluid within $\pm 5^\circ$ Fahrenheit of the fluid temperature set point. A digital readout indicating the test fluid operating temperature shall be provided. The test stand shall be capable of displaying the test fluid temperature with an accuracy of $\pm 2\%$.

3.4.7 **Filtration.** Test stand filtration shall be equipped with standard commercial type elements. All filters used on the test stand shall be equipped with gages or pressure switches to indicate the pressure drop (differential) across the filter. The test stand shall have a means to warn the operator when filters require service or replacement. The contractor shall be responsible for selection of the appropriate micron rating of any return line and/or inlet filters. A suitable strainer, which shall be easily accessible for removal and cleaning, shall be provided between the reservoir and inlet to the pumps.

DESCRIPTION/WORK STATEMENT/SPECIFICATION
FOR
UNIVERSAL HYDRAULIC TEST STAND

Revised 11/08/04

3.4.8 **Water Removal.** The test stand shall include a means to remove any accumulated water from the hydraulic oil.

3.4.9 **Reservoir.** The test stand shall have a 75 to 100 gallon capacity hydraulic oil reservoir. The test stand shall have a gauge for indicating the oil level in the reservoir and a temperature indicator. The test stand shall have a sump or other means to capture and return to the reservoir any oil released from hoses and the component being tested during the process of disconnecting the component from the test stand. The reservoir shall be accessible to allow cleaning of the interior of the hydraulic reservoir.

If the test stand is designed with a separate (remote) hydraulic power supply, it is probable that the hydraulic power supply will be placed outdoors. The hydraulic power supply shall be designed to withstand expected climatic extremes encountered in Anniston, Alabama, such as freezing temperatures, hail, acid rain, etc.

3.4.10 **Hydraulic Fluid Containment.** The test stand shall include a fluid containment system capable of containing the maximum volume of hydraulic oil the test stand can hold (including oil in hoses and components under test) in case of a major fluid spill. In accordance with 40 CFR § 112, the containment system shall be constructed so that any discharge from a primary containment system, such as a reservoir or pipe, will not escape the containment system before cleanup occurs. The fluid containment system shall be easily accessible so that it may be emptied. If the fluid containment system extends beyond the outside boundaries of the test stand walls, it shall be covered in such a way as to prevent a tool from being dropped into or a person from stepping into the oil containment area.

3.4.11 **Cooling System.** As a minimum, cooling of test fluid shall be accomplished through a standard commercial type heat exchanger using cold water where the required test fluid temperature is above 80° F. The heat exchanger shall be off sufficient size to provide the required cooling at all times when operating at a hydraulic fluid temperature in the range of 70° to 180° F, using cooling water at approximately 70° F with an operating pressure of 40 to 70 psig. The preferred cooling system shall be closed-loop, requiring only make-up water. The cooling system offered with the proposed test stand will be a trade-off factor in the technical evaluation of the contractor's proposal.

3.4.12 **Immersion Heaters.** Test fluid temperatures above ambient shall be obtained by the use of immersion heater(s). Installation shall provide for the heater element(s) to be totally immersed in the fluid to a minimum depth of 6 inches when the test fluid is at its lowest operating level. The reservoir in which the immersion heater(s) are installed shall be equipped with an NFPA approved nationally recognized laboratory listed automatic over-temperature shut-off switch that will automatically shut the heater(s) off at 15° F above the maximum reservoir operating temperature. The reservoir shall be provided with a low fluid level switch that will shut down the test stand when the fluid level is less than 6 inches above the heater element(s). The immersion heater(s) shall be equipped with a manual temperature setting control. These heater(s), in conjunction with the heat exchanger in paragraph 3.4.11 shall maintain the temperature of the fluid within +/- 5° F when the control is set in the range of 70° to 180° F.

3.4.13 **Calibration.** The test stand shall include a calibration procedure that provides step-by-step instructions throughout the calibration procedure. The procedure shall include a list of all test equipment required to perform test stand calibration. Any special adapters, fixtures, tooling, etc. required to perform calibration shall be provided with the test stand.

3.4.14 **System of Units.** The test stand shall display all units of measure in the U.S. Customary System of Units.

3.4.15 **Utilities.** The following utilities are available at the installation site:

Electrical: 3 Phase, 60 Hertz, 460 Volts
Shop Air: 100 PSI
Water 75 PSI

**DESCRIPTION/WORK STATEMENT/SPECIFICATION
FOR
UNIVERSAL HYDRAULIC TEST STAND**

Revised 11/08/04

3.4.16 **Drainage.** The contractor shall place drain lines or tie into existing sanitary, storm, or industrial waste lines as required for the test stand. If the test stand requires connection to a waste line, the contractor shall be responsible for all work required to connect the test stand to the waste line. The contractor is responsible for ensuring that all test stand drain line connections meet all applicable environmental rules and regulations.

3.4.17 **Ergonomics.** The test stand shall be ergonomically designed to prevent the occurrence of repetitive stress injuries.

3.4.18 **Maintainability.** The test stand shall be constructed using commercial off-the-shelf components to the maximum extent possible to ensure the availability of repair parts. The contractor shall provide information on the normal maintenance actions required for the test stand including type of maintenance, required interval, mean time to perform maintenance and number and skill of people required to perform the maintenance actions.

3.4.19 **Construction.** The test stand shall be constructed of corrosion resistant material to the maximum extent possible.

3.4.20 **Nameplate.** A nameplate shall be attached to the test stand and shall contain, as a minimum, the following information:

- a. Nomenclature.
- b. Manufacturer's name.
- c. Serial number.
- d. Test stand model designation.
- e. Power input (volts, total amperes, phase, and frequency).
- f. Short-circuit/over current rating.
- g. Contract number or purchase order number.
- h. National stock number (if applicable).
- i. Date of manufacture.

3.4.21 **Lubrication Plate or Chart.** A lubrication plate or chart shall be attached to the test stand. The information provided on the plate or chart shall include:

- a. Points of lubricant application.
- b. Servicing interval.
- c. Type of lubricant(s) with SAE number or lubricant identifier.

3.4.22 **Environmental Compliance.** The test stand provided under this contract shall meet all applicable Environmental Protection Agency (EPA) restrictions in effect on the date of the contract. These regulations apply to the emission of materials hazardous to the environment or the user's health and shall be adhered to during the manufacture, service, transportation, storage and operation of the test stand.

3.4.23 **Recovered Materials.** The contractor is encouraged to use recovered materials to the maximum extent possible in accordance with Federal Acquisition Regulations (FAR).

4.0 Calibration. Upon completion of test stand installation (see section 5.0 herein) at ANAD, the contractor shall verify test stand calibration using the calibration procedure and test equipment provided with the test stand per paragraph 3.4.13 herein. Test stand calibration shall be performed by ANAD calibration personnel and verified by the contractor. Training for ANAD calibration personnel shall be provided (see requirements of paragraph 7.0 herein).

4.1 Performance Test. Upon completion of test stand calibration, the contractor shall demonstrate the test stand's ability to perform manual testing. Testing shall be demonstrated on each of the components listed in Appendix 1 to this specification. See general performance requirements for these components in paragraph 9.0. One each of the components shall be Government Furnished Equipment (GFE) provided to the contractor during the design phase. During these tests, the contractor shall demonstrate proper operation of all test stand controls,

DESCRIPTION/WORK STATEMENT/SPECIFICATION
FOR
UNIVERSAL HYDRAULIC TEST STAND

Revised 11/08/04

functions and features. All tests shall be witnessed by the ANAD Contracting Officer or Contracting Officer's Representative. Should a test stand malfunction or failure occur during any test, the contractor shall correct the problem and repeat the complete test on that component.

4.2 Acceptance. Preliminary acceptance of the test stand shall consist of an inspection. The Contracting Officer's Representative (COR) shall conduct an inspection of the test stand to verify that all requirements of this specification have been met. The inspection shall be conducted at the contractor's facility. The contractor shall be present, and shall be notified in writing if any deficiencies are discovered. The test stand shall not be shipped to Anniston Army Depot until successful completion of the inspection. Final acceptance testing shall be conducted at Anniston Army Depot in accordance with paragraph 4.1. The final acceptance test will be considered successful when the assemblies of paragraph 4.1 are tested with no failures, as evidenced by data recorded from the test stand gages and/or instrumentation. The Contracting Officer's Representative (COR) may give consideration to failures deemed unrelated to the test stand (i.e. acts of God, failure of the unit under test, etc.) or otherwise insignificant. However, the Contracting Officer or his/her designated representative shall have sole authority in resolving disputes that may arise from failures during the final acceptance test. The Government will accept the test stand only after the contractor successfully completes the requirements of paragraphs 4.0, 4.1, and 4.2 herein.

5.0 Installation and Delivery. The contractor shall be responsible for delivering and installing the proposed test stand in building 117 at Anniston Army Depot. Once the test stand is delivered to ANAD, the contractor shall have 30 calendar days to install the test stand and complete all test stand acceptance requirements per paragraph 4.2 herein. The training required per paragraph 7.0 herein shall commence immediately following acceptance of the test stand.

NOTE: Due to renovations scheduled for building 117, the test stand cannot be installed in the facility until approximately March 2006.

5.1 Delivery. The contractor shall be responsible for delivering the test stand to building 117 at Anniston Army Depot. The contractor shall notify the ANAD Contracting Officer at least 14 days before the test stand is to be shipped.

5.1.1 Shipping, Handling, and Storage. The contractor shall be responsible for all shipping, storage, and handling of the test stand and all materials. The Government shall not be responsible for furnishing any labor, equipment, or warehouse space for the loading, unloading, and storing of the test stand or any materials. There are no docks at building 117 for unloading the test stand from a trailer. If a dock is required for unloading the test stand, the test stand will have to be unloaded at building 513 at Anniston Army Depot and then transported to building 117 (a distance of approximately 1/2 mile). If the test stand is unloaded at building 513, the contractor will be responsible for all labor and equipment required to move the test stand to building 117.

5.2 Installation. The contractor shall be responsible for installing the test stand, including all labor and materials required for the complete installation. The contractor shall be responsible for insuring that the installation is compatible with existing facilities. Unless otherwise approved by the Contracting Officer, installation shall be done during normal depot working hours. The area near where the equipment is to be installed is in use for production operations. The contractor shall not interfere with ongoing Government operations and production unless authorized by the Contracting Officer. After installation is complete the test stand shall be ready for operation in accordance with the requirements herein.

DESCRIPTION/WORK STATEMENT/SPECIFICATION
FOR
UNIVERSAL HYDRAULIC TEST STAND

Revised 11/08/04

SAFETY NOTE: Floor surfaces inside and outside building 117 near the installation site may be slippery due to leakage of hydraulic fluid from components being repaired in the shop. All contractor employees working in this area must use extreme caution. Furthermore, eye, foot and hearing protection are required inside building 117 at the installation site. The contractor will be responsible for ensuring that all of its employees, as well as any subcontractors, are aware of these safety requirements and take the necessary precautions to ensure employee safety.

NOTE: Due to renovations scheduled for building 117, the test stand cannot be installed in the facility until approximately March 2006.

5.2.1 Installation Plan. Within 270 calendar days after award of contract, the contractor shall provide an installation plan for the test stand to the Contracting Officer. This document shall include the following information as a minimum:

- a. The contractor's plan for bringing the proposed test stand into the building.
- b. Estimated time required to install the proposed test stand.
- c. A drawing showing the layout of the proposed test stand in building 117. The drawing shall identify the major components of the test stand (i.e. operator's control console, fluid containment system, reservoir, etc.).
- d. A drawing showing the dimensions of the test stand and the locations and sizes of all utilities connections to the test stand.
- e. A drawing showing test stand drain line locations and how/where these will be connected to an existing drain line at the installation site (if applicable).

5.2.2 Electrical. All electrical work shall comply with American National Standards Institute (ANSI) Publication C2 – National Electric Safety Code and with National Fire Prevention Association (NFPA) Publication No. 70 – National Electric Code. All materials used in the installation shall conform to applicable National Electrical Manufacturers Association (NEMA) and Underwriters Laboratory (UL) listings. Workmanship shall be in accordance with standard commercial practices. Runs shall be installed perpendicular and parallel to existing facilities and the equipment to be installed. When equipment is installed near existing power lines, equipment shall be located for proper clearances in accordance with ANSI C2. New equipment shall not be connected to Government power without prior approval of the Contracting Officer. No high voltage work will be accomplished without prior approval of the Contracting Officer. All connections to Government power and all high voltage work shall be performed in the presence of a qualified Government electrician.

5.2.3 Plumbing. All plumbing work shall comply with National Association of Plumbing-Heating-Cooling Contractors/American Society of Plumbing Engineers (NAPHCC/ASPE) Publication - National Standard Plumbing Code. All materials used in the installation of the equipment shall conform to industry standards and shall be compatible with and shall meet the performance requirements of the equipment being installed. Workmanship shall be in accordance with standard commercial practice. Runs shall be installed perpendicular and parallel with existing facilities and the equipment being installed. Bypasses shall not be installed at steam reducing stations. All heating coils shall be trapped independently. Unless otherwise specified, steam and condensate piping shall be insulated with 1-1/2 inch thick calcium silicate with aluminum cover for outside lines and 1-1/2 inch thick fiberglass with all service jacket for interior lines unless subjected to water or vapor.

5.2.4 Concrete. Concrete used in the installation of the equipment shall be Class A and shall have a minimum allowable compressive strength at 28 days of 3,000 PSI unless otherwise specified. Samples for concrete strength tests shall be provided, stored, and tested as directed. Unless otherwise specified, the contractor shall be responsible for the design of all concrete work, including formwork and reinforcing. Ready-mixed concrete shall be used and must be delivered and discharged within 45 minutes after the introduction of water to the cement and aggregate.

**DESCRIPTION/WORK STATEMENT/SPECIFICATION
FOR
UNIVERSAL HYDRAULIC TEST STAND**

Revised 11/08/04

Placing of concrete shall conform to Chapter 4 of the American Concrete Institute Standard ACI 318. Workmanship shall be in accordance with standard commercial practice.

5.2.5 **Trades.** Coordination of trades installing the equipment shall be the responsibility of the contractor.

5.2.6 **Foundation Hardware.** All foundation hardware required for installation of the test stand shall be furnished by the contractor and included in the bid price.

5.2.7 **Utilities.** The contractor will be responsible for making all test stand utilities connections. The utilities available at the test stand installation site are specified in paragraphs 3.3.1 and 3.3.1.1 herein.

5.2.8 **Equipment Protection.** The contractor shall protect the surrounding shop area and equipment near the installation site from damage due to dust, debris, etc., during the installation.

6.0 **Documentation.** The contractor shall provide documentation with the test stand as specified in paragraph 6.1 herein and on the attached DD Form 1423. The contractor shall provide four electronic copies of all documentation. The electronic documentation shall be provided on compact discs (CD-ROMs). Electronic copies of the documentation shall be in Microsoft Office format (Word, Excel) or Adobe Portable Document Format (PDF). Drawings and schematics may be provided in PDF, AutoCAD (.dwg) or Microstation (.dgn) format.

6.1 **Content.** The documentation shall include the following: operator's manuals, maintenance manuals, calibration specifications/procedures, catalogs, and spare parts lists. Maintenance manuals shall include electrical, hydraulic, and pneumatic schematics, as applicable, detailed lockout/tag out procedures, parts lists, troubleshooting procedures, preventive maintenance requirements, lubrication schedule and any other maintenance procedures normally provided by the manufacturer. Schematics shall show and identify all parts down to and including components on printed circuit boards. Catalogs shall fully describe all special tooling, fixtures and attachments available for the equipment being furnished. The recommended spare parts lists shall be complete with part numbers and descriptions, required quantities, prices, and estimated delivery time for the items. In addition, any other commercial vendor literature normally furnished with the test stand shall be provided. All documentation shall be furnished in the English language.

7.0 **Training.** The contractor shall provide 3 days total of training for the operation, maintenance, and calibration of any equipment provided by the contractor, and shall be conducted immediately upon conclusion of all acceptance testing. Training shall be conducted at Anniston Army Depot, Anniston, Alabama during normal depot working hours and on consecutive days, if possible, for a maximum of 10 Government personnel.

8.0 **Warranty.** The test stand shall be covered by a warranty. The warranty period shall begin the day following Government acceptance of the test stand. During the warranty period, the contractor shall be responsible for all costs, including parts, labor, travel and lodging, required to complete repairs of any defects in test stand parts or workmanship. The contractor shall respond to requests for warranty service within 48 hours after requests.

8.1 **Warranty Period.** As a minimum, the test stand shall be covered by a 1-year warranty as specified in paragraph 8.0 above. The preferred warranty period for the test stand is 2 years. The warranty period offered with the proposed test stand will be a trade-off factor in the technical evaluation of the contractor's proposal.

9.0 **Typical component performance requirements.** (See Appendix 1 for detailed drawings)

Hydraulic Power Pack Assembly (12282832)

At 1600 +0/-50 PSIG, with 24.0 +5/-0 VDC applied, and at 90° +/-5°F, the minimum flow and maximum amperage requirements shall fall on or below the curve in Figure 4 of 122882834. This curve ranges from approximately 1.13 GPM at approximately 57.5 amperes, up to a maximum of approximately 1.25 GPM at approximately 62 amperes.

Valve (9377604)

**DESCRIPTION/WORK STATEMENT/SPECIFICATION
FOR
UNIVERSAL HYDRAULIC TEST STAND**

Revised 11/08/04

With pressure increasing from 0 PSIG at port P1, at 1250 PSIG at P1 and 0 PSIG at P2, the flow shall be less than 0.5 GPM. With 1450 +/- 50 PSIG at P1 and 0 PSIG at P2, the flow shall be 1.25 GPM minimum. With pressure applied to port P2, flow from P2 to P1 shall be 1 GPM minimum at 25 +/- 5 PSID.

Pump, hydraulic (13211E3126)

Required characteristics:

Pump delivery: 31.5 GPM @ 1800 RPM

Working pressure: 3800 PSI

Hydraulic fluid: MIL-PRF-46170C

Fluid temperature: 180°F +/- 5°

Hydraulic actuator, ammo door (12310541)

Hydraulic fluid: MIL-PRF-46170C

Fluid temperature: 150°F +/- 25°

Proof Pressure: 2500 PSIG

Burst Pressure: 4000 PSIG

Operating Pressure: 1650 +/- 50 PSIG

Static seals: No leakage is permitted at body seals when either port M1 and/or M2 is pressurized to 1650 +/- 50 PSIG and held for three minutes.

Dynamic seals: With port M1 or M2 pressurized to 1650 +/- 50 PSIG, no flow from the opposite port shall be allowed. Up to 2 CC shall be allowed in three minutes at 150°F +/- 50°.

Rod seal: Cumulative leakage shall not exceed a slight wetting of the external surface (insufficient to form a drop) per 25 full travel cycles at 2500 and 200 PSIG and at 150°F.

Cushioning requirements: Piston cushioning to decelerate a 270 lb. mass (attached to the piston rod) from 25 IN/Sec minimum to 10 IN/SEC maximum within specified distance at either end of stroke with 1650 +/- 50 PSIG system pressure and at 150°F +/- 25° oil temperature.

PAST PERFORMANCE EVALUATION PLAN

SUB-FACTOR	**NEUTRAL/ UNKNOWN RISK	POOR/ Very High Risk	GOOD/ LOW RISK	EXCELLENT/ Very Low Risk
QUALITY Conformance to specifications.	There is no meaningful relevant record of past performance.	It is extremely doubtful that the offeror will successfully perform the required effort.	Little doubt exists that the offeror will successfully perform the required effort.	Essentially no doubt exists that the offeror will successfully perform the required effort.
* DELIVERY Adherence to delivery schedules.	There is no meaningful relevant record of past performance.	It is extremely doubtful that the offeror will successfully perform the required effort.	Little doubt exists that the offeror will successfully perform the required effort.	Essentially no doubt exists that the offeror will successfully perform the required effort.
RESPONSE TO REQUEST FOR WARRANTY MAINTENANCE	There is no meaningful relevant record of past performance.	It is extremely doubtful that the offeror will successfully perform the required effort.	Little doubt exists that the offeror will successfully perform the required effort.	Essentially no doubt exists that the offeror will successfully perform the required effort.
AVAILABILITY OF SPARE PARTS	There is no meaningful relevant record of past performance.	It is extremely doubtful that the offeror will successfully perform the required effort.	Little doubt exists that the offeror will successfully perform the required effort.	Essentially no doubt exists that the offeror will successfully perform the required effort.

*** Failure to adhere to schedules must be documented to show circumstances were in the control of the contractor. If there was government delay or if changes in the delivery schedule were negotiated, contractor can not be penalized.**

**** Offerors with no relative past performance will receive a neutral rating. Relevant experience is any experience that is in any way related to the effort required by this solicitation. It does not have to be exactly the same effort or work on exactly the same piece of equipment.**